

WHAT IS CLAIMED IS:

1. A composition comprising an immunoglobulin or portion thereof linked to an antigen, wherein said immunoglobulin or portion thereof is capable of crosslinking Fc receptors present on the cell surfaces of antigen presenting cells.

5 2. The composition of Claim 1, further comprising a pharmaceutically acceptable carrier.

3. The composition of Claim 2, wherein said composition does not include an adjuvant.

10 4. The composition of Claim 1, wherein said immunoglobulin is in a polyvalent form.

5. The composition of Claim 1, wherein said immunoglobulin is embedded or absorbed on a matrix.

6. The composition of Claim 1, wherein said immunoglobulin is aggregated.

15 7. The composition of Claim 1, wherein said immunoglobulin is an IgG molecule.

8. The composition of Claim 1, wherein said antigen comprises an antigen associated with a disease.

20 9. The composition of Claim 1, wherein said antigen comprises an antigen associated with an autoimmune disease.

10. The composition of Claim 9, wherein said antigen is associated with an autoimmune disease selected from the group consisting of multiple sclerosis, lupus, rheumatoid arthritis, scleroderma, insulin-dependent diabetes and ulcerative colitis.

25 11. The composition of Claim 1 wherein said antigen is an antigen from proteolipid protein.

12. The composition of Claim 1 wherein said antigen is an antigen from myelin basic protein.

30 13. The composition of Claim 1 wherein said immunoglobulin or portion thereof comprises at least part of a domain of a constant region of an immunoglobulin molecule.

14. The composition of Claim 1 wherein the immunoglobulin comprises a fusion protein in which said antigen is covalently joined to said immunoglobulin or portion thereof.

5 15. The composition of Claim 14 wherein said antigen is positioned within at least one complementarity determining region of said immunoglobulin to partially or fully replace said complementarity determining region.

16. The composition of Claim 15 wherein the antigen is positioned within CDR3.

10 17. The composition of Claim 1, wherein said immunoglobulin is a human IgG molecule.

18. The composition of Claim 1, wherein said immunoglobulin is chimeric.

15 19. A method of alleviating symptoms associated with an autoimmune disease comprising:

obtaining a composition comprising an immunoglobulin or portion thereof linked to an antigen involved in said autoimmune disease, wherein said immunoglobulin or portion thereof is capable of crosslinking Fc receptors present on the cell surfaces of antigen presenting cells; and

20 administering said composition to an individual suffering from said autoimmune disease.

20. The method of Claim 19, wherein said composition further comprises a pharmaceutically acceptable carrier.

21. The method of Claim 20, wherein said composition does not include an adjuvant.

25 22. The method of Claim 19, wherein said immunoglobulin is aggregated.

23. The method of Claim 19, wherein said antigen is associated with disease.

24. The method of Claim 19, wherein said antigen is associated with an autoimmune disease.

25. The method of Claim 19, wherein said antigen is associated with an autoimmune disease selected from the group consisting of multiple sclerosis, lupus, rheumatoid arthritis, scleroderma, insulin-dependent diabetes and ulcerative colitis.

5 26. The method of Claim 19 wherein said antigen is an antigen from proteolipid protein.

27. The method of Claim 19 wherein said antigen is an antigen from myelin basic protein.

10 28. The method of Claim 19 wherein said immunoglobulin or portion thereof comprises at least part of a domain of a constant region of an immunoglobulin molecule.

29. The method of Claim 19 wherein the immunoglobulin comprises a fusion protein in which said antigen is covalently joined to said immunoglobulin or portion thereof.

15 30. The method of Claim 19 wherein the said antigen is positioned within at least one complementarity determining region of said immunoglobulin to partially or fully replace said complementarity determining region.

31. The method of Claim 30 wherein said antigen is positioned within CDR3.

20 32. The method of Claim 19, wherein said immunoglobulin is a human IgG molecule.

33. The method of Claim 19, wherein said immunoglobulin is chimeric.

25 34. A method of reducing disease symptoms in an individual comprising:
identifying an individual in need of an increased level of IL-10; and
increasing the level of IL-10 in said individual by administering a composition comprising an immunoglobulin or portion thereof linked to an antigen, wherein said immunoglobulin or portion thereof is capable of crosslinking Fc receptors present on the cell surfaces of antigen presenting cells.

30 35. The method of Claim 34, wherein said individual is suffering from an autoimmune disease.

36. The method of Claim 35, wherein said composition further comprises a pharmaceutically acceptable carrier.

37. The method of Claim 36, wherein said composition does not include an adjuvant.

5 38. The method of Claim 34, wherein said immunoglobulin is aggregated.

39. The method of Claim 34, wherein said immunoglobulin is immobilized onto a lipid or polymer matrix.

40. The method of Claim 35, wherein said antigen is associated with an autoimmune disease selected from the group consisting of multiple sclerosis, lupus, 10 rheumatoid arthritis, scleroderma, insulin-dependent diabetes and ulcerative colitis.

41. The method of Claim 34 wherein said antigen is an antigen from proteolipid protein.

42. The method of Claim 34 wherein said antigen is from myelin basic protein.

15 43. The method of Claim 34 wherein said immunoglobulin or portion thereof comprises at least part of a domain of a constant region of an immunoglobulin molecule.

44. The method of Claim 34 wherein the immunoglobulin comprises a fusion protein in which said antigen is covalently joined to said immunoglobulin or portion thereof. 20

45. The method of Claim 34 wherein said antigen is positioned within at least one complementarity determining region of said immunoglobulin to partially or fully replace said complementarity determining region.

25 46. The method of Claim 45 wherein said antigen is positioned within CDR3.

47. The method of Claim 34, wherein said immunoglobulin is a human IgG molecule.

48. The method of Claim 34, wherein said immunoglobulin is chimeric.

49. A method of reducing disease symptoms in an individual comprising:

identifying an individual in need of an increased level of IL-10 and in need of stimulation of peripheral tolerance; and

increasing the level of IL-10 and stimulating peripheral tolerance in said individual by administering a composition comprising an immunoglobulin or portion thereof linked to an antigen, wherein said immunoglobulin or portion thereof is capable of crosslinking Fc receptors present on the cell surfaces of antigen presenting cells.

50. The method of Claim 49, wherein said individual is suffering from an autoimmune disease.

51. The method of Claim 50, wherein said composition further comprises a pharmaceutically acceptable carrier.

52. The method of Claim 51, wherein said composition does not include an adjuvant.

53. The method of Claim 49, wherein said immunoglobulin is aggregated.

54. The method of Claim 49, wherein said immunoglobulin is immobilized onto a lipid or polymer matrix.

55. The method of Claim 50, wherein said antigen is associated with an autoimmune disease selected from the group consisting of multiple sclerosis, lupus, rheumatoid arthritis, scleroderma, insulin-dependent diabetes and ulcerative colitis.

56. The method of Claim 49 wherein said antigen is from proteolipid protein.

57. The method of Claim 49 wherein said antigen is from myelin basic protein.

58. The method of Claim 49 wherein said immunoglobulin or portion thereof comprises at least part of a domain of a constant region of an immunoglobulin molecule.

59. The method of Claim 49 wherein the immunoglobulin comprises a fusion protein in which said antigen is covalently joined to said immunoglobulin or portion thereof.

60. The method of Claim 49 wherein said antigen is positioned within at least one complementarity determining region of said immunoglobulin to partially or fully replace said complementarity determining region.

61. The method of Claim 60 wherein said antigen is positioned within CDR3.

62. The method of Claim 49, wherein said immunoglobulin is a human IgG molecule.

63. The method of Claim 49, wherein said immunoglobulin is chimeric.

64. A method of reducing disease symptoms in an individual comprising:
identifying an individual in need of a reduced level of IFN γ ; and

decreasing the level of IFN γ in said individual by administering a composition comprising an immunoglobulin or portion thereof linked to an antigen, wherein said immunoglobulin or portion thereof is capable of crosslinking Fc receptors present on the cell surfaces of antigen presenting cells.

65. A method of reducing the symptoms of an autoimmune disease resulting from an immune response to a plurality of self antigens comprising:

administering a composition comprising an immunoglobulin or portion thereof linked to an antigen, wherein said immunoglobulin or portion thereof is capable of crosslinking Fc receptors present on the cell surfaces of antigen presenting cells and wherein said antigen is one of the antigen responsible for said autoimmune disease.